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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/591,289

08/31/2006

Harald Hager

7601/88288

9193

66991

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04/15/2008

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EXAMINER

TAYLOR II, JAMES W

ART UNIT

PAPER NUMBER

4171

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                       |                                     |  |
|------------------------------|---------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/591,289  | <b>Applicant(s)</b><br>HAGER ET AL. |  |
|                              | <b>Examiner</b><br>JAMES W. TAYLOR II | <b>Art Unit</b><br>4171             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/19/2006; 10/26/2008; 2/14/2007; 12/31/2007.</u>            | 6) <input type="checkbox"/> Other: ____.                          |



## DETAILED ACTION

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 19-38 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 18-37 of copending Application No. 10/544041 and claims and over claims 1-18 of copending Application No. 11/368602. The instant application claims a polymer matrix, admixed with a nanoscale light-sensitive metal oxide.

Regarding Application No. 11/544041, the copending application is only differentiated by its extra component: a dye in the polymer matrix. As it would have

been obvious at the time of invention to add a dye to the formulation presented in the instant application to change the tint the resulting product of the formulation, obvious-type double patenting applies.

Regarding Application No. 11/368602, the claims of the copending application aforementioned claim a plastic molded body in terms of its composition, which is the same composition presented in the instant application, except in the copending application, there is one added physical limitation ("plastic material and the metal oxides are transparent to laser light with a wavelength of 300-1300 nm"). The examiner takes the position that because the elements are the same (note from the dependent claims the metal oxides presented are indium-tin oxide as antimony-tin oxide in both applications, the particles sizes are similar, and the polymer matrices are similar), the aforementioned physical limitation would be met.

This is a provisional obviousness-type double patenting rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19-22, 24-25, 31-32, 34-35, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Solutia, Inc. (WO 02/060988).

In claim 19, the applicant the claims:

(i) a plastic matrix (corresponding to “a polyvinyl butyral composition,” Solutia, p. 8, line 28; p. 9, line 6) and

(ii) a nanoscale (Solutia, p. 5, line 21-25) light-sensitive metal oxide (corresponding to “antimony tin oxide” and “indium tin oxide,” Solutia, p. 8, line 29; p. 9, line 7).

The examiner takes the position that because the applicant's system is physically similar to Solutia's system, the applicant's claim that the plastic material is laser-markable and laser-weldable with both inherently be met by Solutia.

Regarding claims 20-22, and 31, the applicant further claims:

(iii) (claims 22 and 31-32) a metal oxide weight % range of 0.0001% to 0.1% relative to the total formulation (Solutia, p. 5, line 12).

(iv) (claims 20-21 and 31-32) the metal oxide has a particle size of 1 to 500 nm (corresponding to “5 to 100 nm,” Solutia, p. 5, line 25).

Regarding claim 34, the applicant further claims:

(v) forming a molded body, semifinished product, molding compounds, or lacquers from the formulation (corresponding to “form a 20 mil thick sheet,” Solutia, p. 8, line 17).

Regarding claim 35, the applicants claim mixing the metal oxide with the plastic matrix (Solutia, p. 8, line 28 to p. 9 line 2; p. 8, lines 16-17) under high shear. Solutia fails to explicitly teach “high shear”. Solutia does state the plastic matrix with metal oxide additives are “blended in a Brabender mixer.” Blending implies the presence of high shear. Therefore, high shear is inherent in Solutia.

Regarding claim 37, Solutia discloses (pg. 9, lines 7-8) a “30-percent dispersion of indium tin oxide in triethyleneglycol bis(2-ethylhexanoate)”, which is a pre-mixture.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Solutia as applied to claims 19-22, 24-25, 31-32, and 35 above, and further in view of Sigma Aldrich (Figure 1, screenshot of website, 3/28/2008).

The applicant further limits the light-sensitive particle to 0.001% to 0.01% by weight of the formulation.

Solutia fails to teach this range of metal oxide particles.

Sigma-Aldrich's website shows current prices for indium-tin-oxide nanoparticles. They are very economically expensive.

Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to decrease the amount of metal oxide to lower the economic cost of producing the formulation.

Claims 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Solutia as applied to claims 19-22, 24-25, 31-32, and 35 above, with obvious considerations.

The applicant further claims the metal oxide is blue indium-tin oxide. Solutia teaches indium-tin oxide but fails to explicitly mention blue indium-tin oxide. Given that there is a small, mutually-exclusive, mutually-exhaustive list consisting of the types of indium-tin oxide—yellow (stoichiometric) and blue (non-stoichiometric)—for one with ordinary skill in the art, it would have been obvious to try using blue indium-tin oxide.

Claims 27-30, and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solutia as applied to claims 18-21, 23-26, and 31 above, and further in view of Murase *et al.* (USP 5,445,871), John Radzwill (USP 4,177,099), Smith *et al.* (USP 5,629,404), or Kawase *et al.* (US 2004/0209031).

The applicant further claims a laundry list of polymer matrices, including polyurethane, polycarbonate, polymethyl methacrylate, bisphenol-A-polycarbonate, and polyamide.

Solutia explicitly teaches polyvinyl butyral but fails to teach any other polymer matrices.

Several polymer are known in the art to be used as windows: polymethyl methacrylate and polycarbonate (Murase *et al.*, abstract), polyurethane (Radzwill, title), bisphenol-A-polycarbonate (Smith *et al.*, lines 4-14), and polyamide (Kawase *et al.*, abstract).



Solutia's invention is a visible-light transmitting, IR absorbing polymer matrix. The reason Solutia is adding his nanoscale particle to the matrix is to absorb IR radiation in a window to make the window heat-transmitting-resistive. However, any window could use Solutia's filler to block IR radiation. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to replace Solutia's polyvinyl butyral matrix with any polymer matrix that is known in the art to be used as a major component of windows.

Regarding claim 37, the applicant further claims the metal oxide is blue indium-tin oxide. Solutia teaches indium-tin oxide but fails to explicitly mention blue indium-tin oxide. Given that there is a small, mutually-exclusive, mutually-exhaustive list consisting of the types of indium-tin oxide—yellow (stoichiometric) and blue (non-stoichiometric)—for one with ordinary skill in the art, it would have been obvious to try using blue indium-tin oxide.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James W Taylor, II whose telephone number is (571)270-5457. The examiner can normally be reached on 7:30 am to 5:00 pm (off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 4174

James W Taylor, II MSc  
Examiner  
Art Unit 4171

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